The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A crosslinkable polymer, comprising

(a) one or more polarizable chromophore moieties;

(b) one or more diene moieties; and

(c) one or more dienophile or dienophile precursor moieties;

wherein the diene and dienophile moieties are reactive to form 4+2 cycloaddition products.

2. The polymer of Claim 1, wherein the dienophile moiety comprises a maleimide moiety.

3. The polymer of Claim 1, wherein the diene moiety comprises a furan moiety.

4. The polymer of Claim 1, wherein the chromophore moiety comprises one or more crosslinkable moieties.

5. The polymer of Claim 4, wherein the crosslinkable moieties comprise trifluorovinyl ether moieties.

6. The polymer of Claim 1, wherein the polymer is thermoplastic

7. A crosslinked polymer, comprising

(a) aligned, polarizable chromophore moieties; and

(b) one or more 4+2 cycloaddition moieties, wherein the 4+2 cycloaddition moieties are reversibly, thermally reactive to provide diene moieties and dienophile moieties.

8. The polymer of Claim 7, wherein the dienophile moiety comprises a maleimide moiety.

9. The polymer of Claim 7, wherein the diene moiety comprises a furan moiety.

10. The polymer of Claim 7, wherein the polymer is thermoplastic.

11. A lattice, comprising the crosslinkable polymer of Claim 1.

12. A lattice, comprising the crosslinked polymer of Claim 7.

13. An electro-optic device, comprising the crosslinkable polymer of Claim 1.

14. An electro-optic device, comprising the crosslinked polymer of Claim 7.

15. A method for making a crosslinked polymer having electro-optic activity, comprising:

(a) heating a crosslinkable polymer to form a softened polymer, the crosslinkable polymer having

(i) one or more polarizable chromophore moieties,

(ii) one or more diene moieties, and

(iii) one or more dienophile moieties;

(b) subjecting the softened polymer to an electric field to provide a poled polymer having aligned, polarizable chromophore moieties; and

(c) cooling the poled polymer to a temperature sufficient to provide a hardened, crosslinked polymer having electro-optic activity.

16. The method of Claim 15, wherein cooling the poled polymer to provide a hardened, crosslinked polymer comprises reacting one or more diene moieties with one or more dienophile moieties to form one or more 4+2 cycloaddition moieties.

17. The method of Claim 15 further comprising:

(a) heating the hardened, crosslinked polymer at a temperature sufficient to provide a softened, crosslinkable polymer;

(b) subjecting the softened, crosslinkable polymer to an electric field to provide a poled crosslinkable polymer; and

(c) cooling the poled crosslinkable polymer to a temperature sufficient to provide a hardened, crosslinked polymer having electro-optic activity.

18. The method of Claim 17, wherein heating the hardened, crosslinked polymer to provide a softened, crosslinkable polymer comprises heating the crosslinked polymer at a temperature sufficient to cause one or more 4+2 cycloaddition moieties to react to form one or more diene moieties and one or more dienophile moieties.

19. The method of Claim 15, wherein the crosslinkable polymer is a thermoplastic polymer.

20. The method of Claim 15, wherein the crosslinked polymer is a thermoplastic polymer.

21. The method of Claim 15, wherein the thermoplastic polymer comprises a dienophile precursor moiety.

22. The method of Claim 15, wherein the chromophore moiety comprises one or more crosslinkable moieties.

23. The method of Claim 22, wherein the crosslinkable moieties are dendrons.

24. The method of Claim 22, wherein the crosslinkable moieties comprise trifluorovinyl ether moieties.

25. The method of Claim 22, further comprising crosslinking the crosslinkable moieties.